

ABSTRACT

A method for fabricating a semiconductor trench structure includes forming a trench in a semiconductor substrate and filling it with a filler. A first thermal process having a first maximum temperature cures the filler. Removing the filler from an upper region of the trench as far as a boundary surface defines a collar region. In a second thermal process having a second maximum temperature that is not significantly higher than the first maximum temperature, a liner is deposited on the collar region and the boundary surface. The liner is removed from the boundary surface, thereby exposing the filler. The filler is then removed from a lower region of the trench.

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